Part of Paper No. 20050404 for 09/942,008

copy of claims from copending application 09/961,895 dated 8/13/2004

Please amend the claims so that they read as follows:

1. (Currently Amended) A method for the preparation of a cathode active material comprising a mixing step of mixing starting materials for synthesis of a compound having the formula Li_xFePO_4, where $0 < x \leq 1$,

a milling step of simultaneously pulverizing and mixing a mixture resulting from said mixing step; and

a sintering step of firing the mixture resulting from said milling step; wherein

a carbon material is added at any one of the above steps;

Li_3PO_4 and $Fe_3(PO_4)_2$ or a hydrate thereof $Fe_3(PO_4)_2 \cdot nH_2O$, where n denotes the number of hydrates, are used as said starting materials for synthesis; and wherein

the content of Fe^{3+} in the total iron in said $Fe_3(PO_4)_2$ or a hydrate thereof $Fe_3(PO_4)_2 \cdot nH_2O$, where n denotes the number of hydrates, is set to 61 wt% or less and not less than 2 wt%.

2. (Original) The method for the preparation of a cathode active material according to claim 1 wherein the carbon content per unit volume of a Li_xFePO4 carbon composite material composed of said Li_xFePO_4, where $0 < x \leq 1$, and said carbon material, is not less than 3 wt%.

3. (Original) The method for the preparation of a cathode active material according to claim 2 wherein, in the carbon material forming said Li_xFePO_4 carbon composite material, the strength area ratio A (D/G) of diffraction rays appearing at the number of waves of 1570 to 1590 cm^{-1} with respect to diffraction lines appearing at the number of waves of the Raman spectrum of graphite in the Raman spectrographic method is not less than 0.3.

4. (Previously Amended) The method for the preparation of a cathode active material according to claim 2 wherein the powder density of said Li_xFePO_4 carbon composite material is not less than 2.2 gm/cm^3.

5. (Previously Amended) The method for the preparation of a cathode active material according to claim 2 wherein the ~~Bulnauer~~ Brunauer Emmet Teller specific surface area of said Li_xFePO_4 carbon composite material is not less than 10.3 m^2/g.

6. (Original) The method for the preparation of a cathode material according to claim 2 wherein the first-order particle of said Li_xFePO_4 carbon composite material is not larger than 3.1 μm.

7. (Currently Amended) A method for the preparation of a non-aqueous electrolyte cell having a cathode having a cathode active material, an anode having an anode active material and a non-aqueous electrolyte, said method comprising a mixing step of mixing starting materials for synthesis of a compound having the formula Li_xFePO_4, where $0 < x \leq 1$,

a milling step of simultaneously pulverizing and mixing a mixture resulting from said mixing step; and

a sintering step of firing the mixture resulting from said milling step; wherein

a carbon material is added at any one of the above steps;

Li_3PO_4 and $Fe_3(PO_4)_2$ or a hydrate thereof $Fe_3(PO_4)_2 \cdot nH_2O$, where n denotes the number of hydrates, are used as said starting materials for synthesis; and wherein

the content of Fe^{3+} in the total iron in said $Fe_3(PO_4)_2$ or a hydrate thereof $Fe_3(PO_4)_2 \cdot nH_2O$, where n denotes the number of hydrates, is set to 61 wt% or less and not less than 2 wt%.

8. (Original) The method for the preparation of a non-aqueous electrolyte cell according to claim 7 wherein the carbon content per unit volume of a Li_xFePO_4 carbon composite material composed of said Li_xFePO_4, where $0 < x \leq 1$, and said carbon material, is not less than 3 wt%.

9. (Original) The method for the preparation of a non-aqueous electrolyte cell according to claim 8 wherein, in the carbon material forming said Li_xFePO_4 carbon composite material, the strength area ration A (D/G) of diffraction rays appearing at the number of waves of 1570 to 1590 cm^{-1} with respect to diffraction lines appearing at the number of waves of 1340 to 1360 cm^{-1} of the Raman spectrum of graphite in the Raman spectrographic method is not less than 0.3.

10. (Previously Amended) The method for the preparation of a non-aqueous electrolyte cell according to claim 2 wherein the powder density of said Li_xFePO_4 carbon composite material is not less than 2.2 gm/cm^3.

11. (Original) The method for the preparation of a non-aqueous electrolyte cell according to claim 8 wherein the Bulnauer Emmet Teller specific surface area of said Li_xFePO_4 carbon composite material is not less than 10.3 m^2/g.

12. (Original) The method for the preparation of a non-aqueous electrolyte cell according to claim 8 wherein the first-order particle of said Li_xFePO_4 carbon composite material is not larger than 3.1 μm.

13. (Original) The method for the preparation of a non-aqueous electrolyte cell according to claim 8 wherein said non-aqueous electrolyte is a liquid-based electrolyte employing a non-aqueous electrolyte solution composed of an electrolyte dissolved in a non-aqueous solvent.

14. (Original) The method for the preparation of a non-aqueous electrolyte cell according to claim 8 wherein said non-aqueous electrolyte is a solid electrolyte.

15. (Original) The method for the preparation of a non-aqueous electrolyte cell according to claim 14 wherein said solid electrolyte is composed of an electrolyte salt and a high molecular compound dissolving said electrolyte salt and wherein said high molecular compound is a gelated electrolyte matrix gelated on absorbing said non-aqueous electrolyte solution.

16. (Currently Amended) A producing method of Li_xFePO_4, $(0 < x \leq 1)$ comprising the steps of:

mixing $FeSO_4$ and phosphate into $Fe_3(PO_4)_2$ wherein the content of Fe^{3+} in the total iron in said $Fe_3(PO_4)_2$ is not more than 61 wt% and not less than 2 wt%;

mixing said $Fe_3(PO_4)_2$ and Li_3PO_4 into a mixture;

adding carbon material to the mixture;

sintering the mixture; and

milling the mixture.